

Climatological Data for February, 1910.
DISTRICT No. 11, CALIFORNIA.

Prof. ALEXANDER G. McADIE, District Editor.

GENERAL SUMMARY.

The month of February was, in general, one of unsettled weather, with both temperature and rainfall below the normal. The most noticeable feature was the continuation of the cold spell which made January a memorable month. There were no warm rains, and as a result vegetation was retarded and the season regarded as a backward one. Two hundred reporting stations show a mean negative departure of nearly $1\frac{1}{2}$ inch in rainfall throughout the State. This means a large deficiency in the supply of water. In general terms, there was a deficiency of $10,000 \times 15,980$ tons of water. The rainfall was indeed the smallest for any February since 1904. The average amounts for the various intervening years were, as follows: 1904, 7.91 inches; 1905, 4.24 inches; 1906, 4.88 inches; 1907, 4.14 inches; 1908, 3.99 inches; 1909, 8.00 inches. The rainfall during 1910 was but 2.43 inches, or less than one-third of the amount that fell last February. A similar deficiency is found in the amount of snowfall in the mountains. Practically less than one-third of the amount fell this year as compared with last year. The accumulated depth of snow on the ground at the close of February was, at elevations of about 7,000 feet, variously estimated to be from 70 to 80 inches. At the same date last year the snow covering in the same localities varied from 160 to 240 inches. In the southern sections the snow cover is disappearing so rapidly in the mountains that unless additional heavy snow falls in the spring months, the ground will be bare at an unusually early date.

The temperature averaged nearly 2° below the normal. The mean, 46° , was the lowest that has occurred in February since 1904. The month was slightly colder than February, 1909; the mean temperature of the latter year was 46.6° . We have an interesting comparison then of two similar months in which the temperatures are nearly the same but the precipitation is widely different. It is hard to explain why this should be. In general, cool periods are also periods of heavy rainfall; and conversely, dry periods are found to be accompanied by marked positive temperature departures.

Some of the noteworthy features of the weather during the month were as follows: During the first week clear, cool weather in the central and northern counties, with brisk north winds. "Northerns" blew in the Great Valley and along the southern coast, and were followed by colder, clear weather, with heavy frosts in the mornings. For six successive mornings these frost favoring conditions prevailed. A change occurred about the 7th and rains were general north of the Tehachapi for a period of 48 hours. Then followed an interval of fair weather, except that showers were frequent in the northern coast counties. It is noticeable that there were some marked weather disturbances in other portions of the country, especially the Atlantic coast States during this period of comparative quiet on the Pacific Coast. There was a cold period during the middle of the month and strong north winds similar in character to those occurring during the first week prevailed and were followed by heavy or killing frosts. It is interesting to note at this point that throughout the winter season which has just ended the forecasts of weather, wind, and temperature were of a high degree of accuracy. There was not a single failure to accurately forecast frost, or to give timely and ample warning to the citrus fruit growers of the State.

Near the close of the second decade a moderate disturbance developed over the Sierra, extending southward into the Valley of the Colorado. This caused unsettled weather for a period of about 48 hours. There were no heavy rains until about the 24th, and then they were confined largely to the northern counties.

As illustrating peculiar weather changes, due possibly to local causes, we may mention that on Sunday, February 27, the temperature in Ventura, Los Angeles, and Orange counties rose 12° in 24 hours, reaching summer heat, that is, a little below 80° , while in the counties just north and also in the counties just south there was a fall of 10° or more. The wind direction was the same, namely from the northwest, in all cases and no reasonable explanation of the divergence has been advanced.

TEMPERATURE.

The monthly mean temperature was 46.0° , which is 1.7° below the normal. The highest monthly mean was 58.5° at Mojave, and the lowest, 24.4° , at Tamarack. The highest temperature was 88° at Azusa on the 12th, and the lowest was -25° on the 3d at Tamarack. The greatest daily range was 57° at Tamarack on the 3d.

PRECIPITATION.

The average precipitation for the State was 2.43 inches, 1.44 inch below the normal. The greatest monthly amount was 17.25 inches at Monumental, and no precipitation occurred at 22 stations scattered throughout the San Joaquin Valley and the south. The greatest daily rainfall was 4.60 inches at Branscomb. The greatest monthly snowfall was 58 inches at Fordyce Dam.

The rainfall during the month at San Francisco was but 60 per cent of the normal, determined from records extending over 61 years. It has been exceeded 40 times in preceding Februaries, and it was the lightest for the same month in a period of 7 years.

MISCELLANEOUS.

There was a marked absence of tule fog in the Great Valley. In this respect the month was a pleasant one and more like that of February, 1908. February, 1909, was generally conceded to be a most unpleasant month, the weather conditions being disagreeable and trying. In some respects the present month resembled that of February two years ago, particularly in the southern sections. The air drained slowly down the slopes of the Sierra Madre, causing a kind of foehn effect. The nights were mostly clear and the surface wind movement light.

The sunshine was slightly above the normal. At San Francisco there were 185 hours, compared with 132 hours during the preceding year.

Earthquake shocks were reported as follows: February 1, 9:35 a. m., Eva; February 14, 9:56 p. m., Eureka, the duration about 3 seconds, Rohnerville, 10:00 a. m., a sharp shock; February 15, San Bernardino, a light shock; February 25, Alameda, 9:55 p. m., slight shock; February 26, Alameda, 11:50 a. m., light shock; February 28, Alameda, 1:30 p. m., light shock.

WEATHER AND HIGH VOLTAGE INSULATORS.

The writer has pointed out in previous issues of the MONTHLY WEATHER REVIEW that the efficiency of high potential transmission lines is, in some measure, dependent upon the ability of high voltage insulators to resist the effects of weather conditions, more particularly dew, fog, frost, surface wetting, and the deposit of dust stirred up by high winds. Various devices have been suggested from time to time, chiefly in the nature of boxes or screens, to prevent deterioration and to keep the insulating surface as clean as possible.

The following notes are abstracted from a paper upon the "Care of high voltage insulators," by Mr. J. O. Hansen, Superintendent of the Pacific Gas and Electric Company, San Jose Power Division. The article in full is published in

the Journal of Electricity, Power and Gas, March 12, 1910, page 235.

In the intensely foggy and windy climate about San Francisco Bay insulators are things that require careful watching and attention. Insulators made to stand a rain or wet test will render good service in fog and wind when they are clean; but when dirty their insulating quality becomes much impaired.

The heavy winter rains keep the insulators clean during a part of the year. During a dry spell of from 1 to 2 months so much dirt will have collected on the insulators that when they become wet there will be enough current leak over to fire the pole. The soft redwood or cedar pole itself catches fire much more easily than the pine cross-arms. When iron pins are used and are shorted by wire, the leakage current may be entirely between the wires over the insulators or the leak may be between a wire and the ground, and then fire the pole. But by running the shorting wire to the ground, the pole is thoroughly protected from such burning. Still the leakage current is present, and, if allowed to become large enough, through the wetting of the accumulated dirt by fogs or light rains, an arc forms which either shatters the insulators or burns the transmission wire in two. In the majority of cases either of these accidents is easier to repair than a burned pole. With the iron insulator pins shorted and grounded more current and consequently a greater accumulation of dirt and dampness are required to start trouble, so that more time can be allowed between cleanings of the insulators. The dirt accumulates over all parts of the insulator in an even layer; but an insulator that has been on the line through the winter has more dirt left on the protected parts than on the exposed parts where the rain has washed some of it off.

For this reason the suspension type of insulator is better than the pin insulators, because in the suspension type a larger percentage of the entire surface may be washed off by the rains. The method of supporting by a large clamp is also probably better than by a small tie wire on the pin insulators, because of the difference in corona discharges from small and large diameter surfaces.

First dry cloths were used in cleaning the insulators. Later it was found more effective to apply gasoline on the cloths to cut the dirt and grease; but because gasoline evaporates so quickly kerosene is now being used with good results. The best cleaning is with clear water applied with a hose. All parts are then washed off without any residue being left on the surface.

An insulator made to hold up under all of the dirt that will accumulate on it during a season and have its surface so exposed that the winter rains will thoroughly clean it, should give satisfactory results. The problem then presented is whether it will be cheaper to use small insulators and pay to keep them clean or use large insulators which will withstand the dirt and fogs through the summer and be automatically cleaned by the winter rains washing them.

NOTES ON RIVER CONDITIONS IN THE SACRAMENTO AND SAN JOAQUIN WATERSHEDS DURING FEBRUARY, 1910.

The stages of all streams in the Sacramento watershed during February, 1910, averaged from 3 feet to over 10 feet lower than for the corresponding month of 1909. Heavy local rains in the

upper valley on the 24th resulted in a substantial rise in the upper Sacramento River during the last decade. The most rapid rises occurred at Redding and Red Bluff, where the river rose nearly 10 feet during the 24 hours ending at 7 a. m. of the 25th. The crest of this rise moved rapidly down the river, passing Colusa on the 27th and the mouth of the Feather about March 1.

No freshets occurred in any of the tributaries of the Sacramento, Stony Creek on the east keeping well below the 3-foot stage, except on the 26th, when the highest of the month, 3.1 feet, was recorded. The Yuba and Feather rivers on the west maintained uniformly low stages until the last week of the month, when melting snows resulted in a slight rise.

The San Joaquin River and all its tributaries averaged from 1 foot to over 6 feet below the usual February stages. There were neither freshets nor marked rises in any of the streams of the San Joaquin watershed during the month.

At the end of February the visible water supply was much less than usual and, at the present time, conditions indicate abnormally low streams during the coming summer.

All streams in the Sacramento and San Joaquin watersheds have averaged, since January 1, 1910, to date, much below the stages that were maintained during the corresponding period last year. They may be considered as having been practically normal, and fairly represented the stages to be expected during a period of light seasonal precipitation.

There have been no freshets in any of the tributaries of the main rivers of the two watersheds, and the compacted condition of the snow, of which there has been less than usual, has greatly reduced the run-off of the innumerable small feeders that drain in the high Sierra.

There is much less than the usual amount of water in the large flood basin of the Sacramento, and practically no run-off from the Colusa, Sutter, and Yolo basins.

The most of the levees that were damaged or leveled during the floods of 1909 have been repaired or replaced, and in some of the districts new land has been reclaimed.

The Southern Pacific Company will soon have its plans completed for a new bridge which will span the Sacramento River at Sacramento City. Arrangements will be made in the original construction of the bridge for the reception of an automatic river stage register, which will be installed by the Weather Bureau.—*N. R. Taylor, Local Forecaster.*

TABLE 1.—Climatological data for February, 1910. District No. 11, California.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.				Precipitation, in inches.				Sky.	Prevailing wind direction.	Observers.						
				Mean.	Departure from the normal.	Highest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmeasured.	Number of rainy days 0.1 inch or more.	Number of partly cloudy days.	Number of cloudy days.					
Oregon.																				
Klamath Agency.	Klamath.	4,169	2	24.4		40	28	- 5	2	36	3.10	1.50	16.0	4	11	3	14	s.		
Klamath Falls.	do.	4,250	15	30.4	+ 4.0	63	14	+ 2	2	21	+ 0.62	0.54	5.7	12	4	12	12	nw.		
Lakeview.	Lake.	4,800	7	31.2	+ 0.8	59	28	- 1	2	38	2.30	- 0.04	0.95	22.0	5	9	6	13	s.	
Merrill.	Klamath.	4,070	4	30.0		54	28	- 3	2	34	0.24	- 0.10	2.0	5	9	6	13	s.		
Yonna.	do.	3	28.6			50	28	- 12	3	49	1.74	- 0.58	1.1	13	2	22	4	s.		
California.																				
Alameda.	Alameda.	1	48.5			68	13	29	4	29	1.25	- 0.50	0.0	9	10	6	12	n.		
Alturas.	Modoc.	4,460	6	29.0		57	13	- 13	2	49	1.28	- 0.30	11.5	13	10	11	11	s.		
Anderson (near).	Shasta.	550	1	46.2		69	12	28	3	30	5.17	- 1.05	0.0	10	13	4	11	n.		
Angiola.	Tulare.	208	10	40.4	- 9.3	70	18	20	3	30	0.00	- 0.86	0.00	0	21	7	0	n.		
Antioch.	Contra Costa.	46	31	52.4	+ 1.6	68	26†	32	3†	1	1.18	- 0.42	0.70	0.0	4	15	7	6	nw.	
Aptos.	Santa Cruz.	102	25	48.9	- 0.6	68	13	27	2	39	1.93	- 1.69	0.46	0.0	9	13	3	12	nw.	
Arrowhead Springs.	San Bernardino.	2,000	1	55.1		80	12	32	2	39	0.48	- 0.36	0.0	2	14	14	0	ne.		
Auburn.	Placer.	1,360	39	51.3	+ 3.2	74	18†	31	5†	38	4.90	+ 0.05	1.35	0.0	12	10	0	18	....
Avalon.	Los Angeles.			54.2		70	25	41	16	19	0.09	- 0.09	0.0	1	18	8	2	nw.		
Asusa.	do.	540	8	54.0		88	12	27	3	48	0.27	- 2.68	0.18	0.0	2	24	1	3	....
Bagdad.	San Bernardino.	784	7	58.4		89	28	33	16	34	0.00	- 0.00	0.0	0	2	24	0	4	....
Bakersfield.	Kern.	404	21	50.8	- 1.6	71	27	30	3	33	0.22	- 0.29	0.18	0.0	2	24	0	4	w.	
Barstow.	San Bernardino.	2,105	7	46.2		74	28	18	3	40	0.00	- 0.43	0.00	0.0	0	1	5	9	s.	
Berkeley.	Alameda.	317	23	47.9	- 1.8	63	12	34	2†	19	1.85	- 1.80	0.50	0.0	9	14	5	9	s.	
Biggs.	Butte.	98	11	50.8	- 4.2	68	13†	29	4	....	2.25	- 1.19	0.75	0.0	6	11	5	12	s.
Bishop.	Inyo.	4,450	15																	
Blocksburg.	Humboldt.	1,700	4	43.1		64	12	22	3	30	10.65	- 2.85	1.0	13	3	7	18	se.		
Blue Canyon.	Placer.	4,695	11	37.2	- 0.6	60	13	17	2	33	5.60	- 6.96	1.50	41.0	10	12	12	n.		
Blythe.	Riverside.	1	54.0			85	28	22	3	47	0.00	- 0.00	0.0	0	25	3	0	....	
Branscomb.	Mendocino.	2,000	10	42.6		69	12	20	2	35	13.36	- 4.23	4.60	8.0	0	11	8	n.		
Brawley.	Imperial.	105	1	55.6		83	28	29	18	45	0.00	- 0.00	0.0	0	17	10	1	w.		
Brush Creek.	Butte.	2,140	6	40.2		62	12	22	3	31	8.50	- 1.55	T.	12	10	6	12	s.		
Calexico.	Imperial.	0	5	56.8		84	25	32	17†	37	0.00	- 0.00	0.0	0	19	8	1	nw.		
Caliente.	Kern.	1,290	34	53.1 ^b	+ 1.3	69	27	34	5	....	0.00	- 1.76	0.00	0.0	0	26	0	2	....
Calistoga.	Napa.	363	38	47.2	- 1.9	62	13	28	5	34	4.26	- 0.70	1.37	0.0	11	8	0	20	w.	
Campbell.	Santa Clara.	217	13	48.0	- 2.3	62	13	22	3	34	0.54	- 2.02	0.20	0.0	7	11	2	15	nw.	
Campptonville (near).	Yuba.	3,500	3	41.8		70	13	22	14	32	12.28	- 2.28	8.0	12	10	2	16	....	
Cedarville.	Modoc.	4,675	16	29.4	- 5.5	60	13	24	3	35	1.81	+ 0.48	0.40	14.5	9	11	17	0	sw.	
Chico.	Butte.	189	40	47.9	- 2.4	63	5†	21	3	40	2.49	- 0.83	1.00	0.0	10	8	6	14	s.	
Chino Flat.	Humboldt.	600	1	46.6		63	13	32	2	32	6.63	- 2.04	T.	7	9	11	8	w.		
Chino.	San Bernardino.	714	13	51.2	- 2.3	80	28	32	2†	30	0.10	- 1.58	0.10	0.0	1	19	2	7	sw.	
Cisco.	Placer.	5,939	39	30.3	0.7	44	28	10	12	30	5.30	- 3.32	1.00	43.0	11	16	0	12	sw.	
Clemont.	Los Angeles.	1,200	18	52.6	+ 1.0	82	12	28	38	45	- 1.41	- 0.42	0.85	1.0	3	6	16	6	w.	
Cloverdale.	Sonoma.	340	8	48.8	- 4.1	72	13	23	3	31	4.23	- 1.98	0.15	0.0	8	7	12	9	sw.	
Colfax.	Placer.	2,421	39	41.8	- 4.1	67	13	20	3	39	0.00	- 0.62	1.50	0.5	11	10	4	10	s.	
Colusa.	Colusa.	60	7	47.4		61	12†	25	3	31	1.51	- 0.42	0.95	0.0	5	10	0	18	sw.	
Corning.	Tehama.	277	24	46.8	- 2.0	60	28	32	3	32	2.11	- 0.92	0.95	0.0	6	4	2	22	n.	
Cuyamaca (1).	San Diego.	4,677	11	41.8	+ 5.7	68	27	31	1†	30	1.35	- 4.62	0.85	1.0	3	6	16	6	n.	
Daunt.	San Diego.	4,000	3	42.0		75	13	14	2	37	2.70	- 1.89	1.80	7	8	7	13	e.		
Davisville.	Yolo.	51	38	44.4	- 7.2	65	4	24	4	41	0.40	- 1.98	0.15	0.0	8	7	12	9	sw.	
Deer Creek.	Nevada.	3,700	3	37.4		64	28	10	2	37	7.40	- 2.00	20.0	11	8	9	11	n.		
Delta.	Shasta.	1,138	25	47.6	+ 2.1	71	17	25	4	40	6.85	+ 0.90	2.70	3.0	0	10	0	18	n.	
Denair.	Stanislaus.	126	10	48.9	- 0.7	82	24	25	3	34	0.55	- 1.14	0.26	0.0	7	11	8	9	se.	
Dobbins.	Yuba.	1,650	6	47.7		68	10	28	3	30	5.55	- 1.52	0.0	13	5	15	7	sw.		
Dudleys.	Mariposa.	3,000	1	39.6		67	13	12	3†	38	2.63	- 0.84	1.0	8	10	7	11	w.		
Dunnigan.	Yolo.	65	33	48.8	- 0.4	67	26	30	3†	38	1.05	- 1.30	1.05	0.0	1	13	7	8	sw.	
Dunsmuir.	Siskiyou.	2,285	21	39.8	- 1.0	57	12†	18	3	60	6.70	+ 0.88	2.16	6.0	9	10	0	18	n.	
Durham.	Butte.	180	15	46.3	- 3.9	64	12	23	3	27	2.39	- 0.62	1.06	0.0	6	9	5	10	sw.	
El Cajon.	San Diego.	482	11	51.4	- 1.4	82	12	26	3	45	0.35	- 2.31	0.20	0.0	3	21	5	2	sw.	
Electra.	Amador.	725	6	48.8		67	13	27	2	49	2.19	- 1.30	0.0	0	7	10	8	10	sw.	
Elsinore.	Riverside.	1,234	24	50.6	- 2.4	82	22	26	17†	49	0.14	- 1.62	0.08	0.0	2	21	4	3	sw.	
Emigrant Gap.	Placer.	5,230	30	37.0	+ 1.6	58	12†	27	3†	50	0.49	- 2.44	0.20	44.0	11	14	0	14	sw.	
Escondido.	San Diego.	657	16	52.1	+ 0.1	86	12	27	3†	50	0.49	- 1.89	0.40	0.0	2	28	0	0	w.	
Eureka.	Humboldt.	64	24	45.8	- 1.0	59	23	29	23	33	7.34	- 0.38	2.63	0.0	18	5	6	17	se.	
Farmington.	San Joaquin.	111	31	46.2	- 3.9	61	28	25	3	33	2.26	- 0.17	0.74	0.0	7	12	8	8	nw.	
Folsom.	Sacramento.	252	38	47.6	- 3.5	68	28	27	2	29	2.79	- 0.59	0.60	0.0	12	13	5	10	sw.	
Fordyce Dam.	Nevada.	6,500	15	27.0		56	13	7	15	52	7.50	- 2.56	1.30	35.0	12	13	4	15	sw.	
Fouts Springs.	Colusa.	1,650	6	42.4		68	13	12	3	30	3.10	- 0.67	0.0	7	14	0	14	....	
Fresno.	Fresno.	293	23	48.9	- 0.3	73	13	26	2	30	0.21	- 0.96	0.09	0.0	6	9	11	8	nw.	
Fruto.	Glen.	624	21	45.5	- 4.2	62	12	27	4	31	1.41	- 1.22	0.70	0.0	5	11	1	20	sw.	
Galt.	Sacramento.	49	32	47.4	- 2.9	66	27	33	15	31	1.72	- 0.68	0.35	0.0	8	7	1	20	sw.	
Georgetown.	El Dorado.	2,650	37	42.6	- 5.8	66	12	22	3	33	7.88	- 0.12	2.03	0.5	13	11	19	0	9	se.
Gilroy.	Santa Clara.	193	36	51.0	+ 1.7	75	28	25	3	31	1.18	- 1.58	0.55	0.0	9	19	0	9	se.	
Gold Run.	Placer.	3,222	11	42.2	- 1.8	63	13	22	2	31	6.17	- 3.20	2.05	4.0	11	11	6	11	....
Gonzales.	Monterey.	127	11	50.1	+ 2.2	75	16	26	2	30	0									

TABLE 1.—Climatological data for February, 1910. District No. 11—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.				Precipitation, in inches.				Sky.	Prevailing wind direction	Observers.				
				Mean.	Highest.	Lowest.	Date.	Greatest daily range.	Total.	Greatest in 24 hours.	Departure from the normal.	Total snowfall unmeted.	Number of rainy days, 0.1 inch or more.	Number of clear days.	Number of cloudy days.			
<i>California—Cont'd.</i>																		
Lone Pine.	Inyo.	2,728	5	44.0	74	28	-15	1	43	0.00	0.00	0.0	0	19	9	0	s.	
Long Valley.	Lassen.	4,400	29.3	58	28	-5	2	32	0.98	0.45	0.80	7	8	11	5	sw.		
Los Angeles.	Los Angeles.	293	55.6	+ 1.5	82	12	38	2	29	0.11	-3.16	0.07	0	2	11	12	ne.	
Los Banos.	Merced.	121	23	49.1	- 1.2	62	12†	32	3	0.30	-0.68	0.30	0	1	11	1	sw.	
Los Gatos.	Santa Clara.	600	23	48.8	- 0.8	72	13	28	3	2.04	-2.62	0.97	0	7	15	2	n.	
Lytle Creek.	San Bernardino.	2,900	1	47.7	77	28	-7	36	0.61	0.46	0.0	0	2	16	6	n.		
Maddel.	Siskiyou.	4,258	3	28.2	57	14	-7	2	40	1.11	0.52	0	4	7	6	15.		
Madeline.	Lassen.	5,270	1	24.5	53	13	-10	12	42	1.43	0.30	8.0	8	9	5	14.		
Magalia.	Butte.	2,321	6	41.7	65	15	21	2	36	11.09	2.60	2.0	14	8	9	11.		
Mammoth Tank.	Imperial.	257	32	57.6	- 1.3	83	13†	31	18	40.00	-0.35	0.00	0	0	28	0	w.	
Marysville.	Yuba.	67	30	45.4	- 5.9	60	6†	29	5	21	2.33	-0.34	0.70	0	0	16	0	12.
Mecca.	Riverside.	185	4	55.3	-	84	25	25	18	43	0.00	0.00	0	0	27	0	1.	
Menlo Park.	San Mateo.	64	32	46.9	- 3.3	64	23†	28	3	0.97	-1.09	0.36	0.0	0	5	14	nw.	
Merced.	Merced.	173	36														Do.	
Mill Creek (1).	Amador.	3	40.2		60	28	20	2	25	4.53	1.26	3.0	11	11	9	8	s.	
Milton (near).	Calaveras.	660	19	48.2	- 2.6	63	13	28	2	22	1.03	-1.76	0.28	0	5	6	11	11.
Modesto.	Stanislaus.	90	38	49.4	- 0.7	68	28	28	3	0.50	-0.70	0.20	0	4	22	0	6.	
Mojave.	Kern.	2,751	33	58.5	+ 9.7	74	13†	32	2	38	0.00	-0.84	0.00	0.0	0	26	0	w.
Mokelumne Hill.	Calaveras.	1,550	17														C. E. Prindle.	
Mono Ranch.	Ventura.	3,210	4	43.0		71	28	18	2	39	0.00	0.40	0.0	0	0	16	11	1. nw.
Montague.	Siskiyou.	2,450	22														H. Lathrop.	
Monterey.	Monterey.	15	45	51.4	+ 0.2	66	8†	28	2	1.08	-1.44	0.46	0.0	6	16	9	3 se.	
Monterio.	Kern.	4,500	11	43.6	- 4.1	68	11	18	1	34	0.77	-2.75	0.30	0	4	13	12	3 nw.
Monumental.	Del Norte.	5	37.7		72	7	14	46	17.25		2.37	0.0	0	0	0	0	John C. Knecht.	
Mount Tamalpais.	Marin.	2,375	11	42.4	- 3.2	61	12	28	1	17	4.25	-0.18	1.03	0.0	14	5	13	10. nw.
Napa City.	Napa.	20	33	47.4	-	2.0	69	28	2	34	2.39	-1.87	0.67	0	10	9	9	s.
Napa (S. H.).	do.	60	32	47.6	- 1.8	65	13†	30	4	27	2.01	-2.06	0.85	0	11	6	11	sw.
Needles.	San Bernardino.	477	18	55.1	- 2.7	83	14†	27	17	43	0.00	-0.16	0.00	0	0	24	3	1 w.
Nellie.	San Diego.	5,350	1	38.4		59	28	14	2	21	1.40	0.70	1.0	0	3	14	7	n.
Nevada City.	Nevada.	2,580	18	41.8	- 0.7	69	12	17	3	39	5.30	-2.27	1.09	1.0	12	10	10	sw.
Newcastle.	Placer.	970	17	51.8	+ 4.1	79	19	31	15	37	3.54	-1.23	0.79	0	12	5	19	4 nw.
Newhall.	Los Angeles.	1,200	33	48.6	- 1.6	80	13†	22	16	T.	-2.88	T.	0	0	0	20	0	8 ne.
Newman.	Stanislaus.	91	21	50.0	- 1.8	70	23	27	3	31	0.28	-1.13	0.11	0	0	6	0	16.
Nimshev.	Butte.	2,500	6	40.6		65	12	17	2	31	8.66	1.85	6.5	12	0	0	20	w.
North Bloomfield.	Nevada.	3,200	13	38.1	- 0.2	68	27	18	2†	38	4.90	-3.72	2.10	3.5	4	7	17	4.
North Fork.	Madera.	3,000	6	42.5		76	17	16	5	52	1.33	0.43	1.0	6	3	20	5.	
Oakdale.	Stanislaus.	156	16	47.2	- 1.5	63	13†	28	5	0.83	-0.99	0.25	0.8	8	11	10	12 sw.	
Oakland.	Alameda.	36	34	49.6	- 0.7	65	12	24	2	22	1.64	-1.73	0.33	0	11	10	6	11.
Oceanside.	San Diego.			53.0		66	13	38	1†	25	0.11	0.10	0.0	0	0	12	4	w.
Ojai Valley.	Ventura.	910	4	52.2		85	28	24	3	45	T.	T.	0	0	0	20	7	1 sw.
Orland.	Glenn.	254	28	46.9	- 4.3	69	26	29	2†	32	1.75	-0.34	0.35	8	13	7	8 n.	
Orleans.	Humboldt.	520	7	46.8		67	7†	25	3	35	3.84	1.30	0.0	14	6	6	16.	
Orovile (near).	Butte.	250	26	47.4	- 4.1	62	28	25	2	29	2.45	-0.95	0.95	0	8	7	13 s.	
Palermo.	do.	213	19	46.7	- 3.0	63	11†	24	4	37	2.30	+ 0.04	1.20	0	4	8	11	9 s.
Palm Springs.	Riverside.	584	21	54.8	- 3.9	88	28	28	2†	39	0.00	-0.66	0.00	0	0	19	5	w.
Pasadena.	Los Angeles.	827	20	52.2	- 0.2	88	12	30	2†	39	0.31	-1.50	0.17	0	3	23	3	2 sw.
Paso Robles.	San Luis Obispo.	800	23	48.2	+ 0.5	75	14	18	3	42	0.28	-2.04	0.28	0	1	23	4	1 nw.
Peachland.	Sonoma.	190	14	47.4	- 3.1	74	28	22	2†	37	5.09	-1.36	1.30	0	13	14	10	4 sw.
Penstock Camp.	Tuolumne.	3,750	3	42.0		64	12	22	2†	26	3.55	0.90	0.50	6.5	12	21	5 sc.	
Placerville.	El Dorado.	1,875	21	42.8	- 0.8	58	28	22	3†	28	2.03	-0.72	1.10	1.0	14	11	15	2 sw.
Point Lobos.	San Francisco.	250	17	50.2	+ 0.1	63	13	38	3	18	1.17	-0.83	0.47	0	12	6	11	nw.
Point Reyes.	Marin.	490	18	48.6	- 0.6	64	13	38	3	18	2.11	-0.49	0.57	0.0	12	6	11	11.
Porterville.	Tulare.	464	21	50.2	- 1.5	73	13	26	3†	38	0.22	-0.86	0.10	0	4	10	16	2.
Quincy.	Plumas.	3,400	15	33.4	- 4.6	59	12	12	3†	41	2.00	-4.99	1.00	10.0	3	17	4	7 sw.
Red Bluff.	Tehama.	307	33	46.7	- 2.6	64	12	30	4	31	1.90	-1.74	0.74	0	0	9	16	16.
Redding.	Shasta.	552	35	46.6	- 2.7	65	15	25	3	30	2.67	-2.45	1.12	0	12	15	6	7 n.
Redlands.	San Bernardino.	1,352	17	51.2	- 1.0	82	13	27	3	39	0.19	-0.84	0.17	0	0	13	10	5.
Reedley.	Fresno.	347	10	49.3	- 1.6	71	13	27	2†	39	T.	-1.58	T.	0	0	0	19	4 n.
Rialto (near).	San Bernardino.	2,250	4	52.4		78	13	34	2	23	0.70	-0.49	0.49	0	0	20	0	3 se.
Riverside.	Riverside.	851	28	52.3	- 0.4	84	12	27	3	42	0.04	-1.75	0.02	0	0	18	7	3 w.
Rocklin.	Placer.	249	39	48.2	- 1.9	69	25	27	5	29	2.03	-0.03	0.62	0	0	12	12	9 s.
Rohnerville.	Humboldt.	75	7	47.2		61	11	25	2	33	7.81	2.35	0.00	0	0	7	14	n.
Sacramento (1).	Sacramento.	71	33	48.1	- 2.1	68	28	34	3	22	0.83	-2.32	0.23	0	0	9	11	9 se.
Sacramento (2).	do.	35	57	48.4	- 2.1	66	28	29	3	26	1.18	-1.57	0.29	0	0	10	8	n.
St. Helena.	Napa.	255	2	46.6		71	28	26	4	36	3.57	1.38	0.00	0	0	9	12	0 se.
Salinas.	Monterey.	40	36	50.2	- 0.1	75	23	29	2	34	0.69	-1.47	0.19	0	0	8	19	1. w.
San Bernardino.	San Bernardino.	1,054	18	51.6	- 1.7	86	12	33	3	49	0.08	-2.77	0.64	0	0	11	15	2 sw.
San Diego.	San Diego.	93	39	52.9	- 1.7	72	12	37	2	22	0.19	-1.27	0.10	0	0	20	5	3 nc.
San Francisco.	San Francisco.	207	39	50.4	- 0.9	64	12	38	3	49	1.09	-1.60	0.64	0	0	13	11	7 w.
San Jacinto.	Riverside.	1,550	17	52.6	+ 1.3	87	15	25	2†	50	0.24	-0.91	0.24	0	0	1	18	4 w.
San Jose.	Santa Clara.	95	35	48.6	- 2.0	67	13	25	2	32	0.83	-1.32	0.42	0	0	12	9	7 w.
San Leandro.	Alameda.	48	15	48.3	- 6.4	67	13	26	2	28	1.50	-2.32	0.33	0	0	8	12	9 w.
San Luis Obispo.	San Luis Obispo.	201	15	52.4	- 0.1	77	12	27	3	35	0.43	-3.35	0.26	0	0	4	14	9 nw.
San Mateo.	San Mateo.	22	36	50.5	- 0.9	68	13†	32										

MONTHLY WEATHER REVIEW.

FEBRUARY, 1910

TABLE 1.—Climatological data for February, 1910. District No. 11—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.				Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.			
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmeasured.	Number of rainy days, 0.1 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
<i>California—Cont'd.</i>																				
Summit.	Placer.	7,017	37	28.4	- 0.4	46	12†	- 2	2	20	5.10	- 1.91	1.20	51.0	9	16	1	11	sw.	Southern Pacific Co.
Susanville.	Lassen.	4,175	21	28.4	- 6.0	56	28	- 8	3	31	0.90	- 1.96	0.25	7.0	5	6	20	2	sw.	James Branham.
Tamarack.	Alpine.	9,000	4	24.4	.....	53	28	- 25	3	57	3.86	.....	1.20	46.0	9	13	4	11	sw.	William Bennett.
Tehachapi.	Kern.	3,964	33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Southern Pacific Co.
Tehama.	Tehama.	220	39	55.6	+ 4.6	74	13†	34	2†	.....	2.55	+ 0.12	0.85	0.0	9	10	0	18	s.	Do.
Three Rivers.	Tulare.	870	48.2	.....	.....	74	13	26	3	34	0.89	.....	0.48	0.0	6	10	13	5	sw.	E. D. Barton.
Towle.	Placer.	3,704	24	38.2	- 3.6	65	12	15	2†	45	7.60	- 0.20	2.40	9.0	9	13	1	14	s.	Southern Pacific Co.
Tracy.	San Joaquin.	64	30	45.9	- 4.6	60	27	26	3†	.....	1.20	+ 0.04	0.34	0.0	8	12	6	10	sw.	Do.
Ukiah.	Mendocino.	620	17	46.4	- 1.3	68	12	21	2†	36	4.24	- 0.88	1.00	0.0	12	10	10	8	nw.	Dr. George McGowen.
Upland.	San Bernardino.	1,750	13	50.1	- 1.8	81	12	28	2†	41	0.56	- 3.07	0.40	0.0	2	17	3	8	w.	A. P. Harwood.
Upper Lake.	Lake.	1,350	25	44.8	- 2.7	63	12	21	2†	35	3.38	+ 0.06	0.64	T.	11	16	6	6	nw.	C. M. Hammond.
Vacaville.	Solano.	175	22	48.1	- 3.1	69	28	26	2†	32	1.66	- 1.78	0.40	0.0	10	7	15	6	sw.	G. O. Coburn.
Valley Springs.	Calveras.	673	21	49.6	- 1.3	65	23	30	2	.....	1.93	- 0.71	0.68	0.0	8	6	13	9	w.	Southern Pacific Co.
Visalia.	Tulare.	334	22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Santa Fe Co.
Warner Springs.	San Diego.	3,165	3	48.2	.....	80	12	24	6	43	0.25	.....	0.16	0.5	2	.....	.....	.....	.....	Mrs. E. F. Sanford.
Wasco.	Kern.	336	10	39.8	- 9.8	64	13†	20	9†	44	0.00	- 1.43	0.00	0.0	0	23	2	3	.....	Santa Fe Co.
Watsonville.	Santa Cruz.	23	14	53.0	+ 0.7	76	12†	29	1†	40	1.75	- 1.65	0.44	0.0	8	7	15	6	sw.	Spreckels Sugar Co.
Westley.	Stanislaus.	90	21	47.4	- 5.0	64	23	28	3	.....	0.35	- 0.72	0.20	0.0	2	15	0	13	n.	Southern Pacific Co.
Wheatland.	Yuba.	84	23	47.1	- 1.6	61	25	27	3	36	2.37	- 0.19	0.72	0.0	11	10	6	12	se.	Wm. Lumbard.
Willows.	Glenn.	136	31	46.6	- 2.2	77	23	27	4	34	1.61	- 0.32	0.64	0.0	7	11	2	15	n.	M. T. Harrington, Jr.
Yosemite.	Mariposa.	3,045	6	36.0	.....	64	28	5	4	41	2.80	.....	0.50	21.0	9	15	4	9	.....	C. W. Tucker.

*, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

* Precipitation included in that of the next measurement.

** Temperature extremes are from observed readings of the dry-bulb; means are computed from observed readings.

† Also on other dates.

‡ Separate dates of falls not recorded.

Data are from standard instruments not supplied by the U. S. Weather Bureau.

Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

Estimated by observer.

||| Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for February, 1910. District No. 11, California.*

TABLE 2.—*Daily precipitation for February, 1910. District No. 11—Continued.*

TABLE 2.—*Daily precipitation for February, 1910. District No. 11—Continued.*

TABLE 2—*Daily precipitation for February, 1910. District No. 11—Continued.*

TABLE 3.—Maximum and minimum temperatures at selected stations for February, 1910. District No. 11, California.

Date.	California.																											
	Lakeview, Ore.		Altausas.		Barlow.		Branscomb.		Brawley.		Colusa.		Eureka.		Fresno.		Independence.		Los Angeles.		Mount Tamalpais.		Nevada City.		Porterville.		Red Bluff.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1.	34	9	33	0	57	30	49	24	67	39	55	37	45	33	50	34	43	20	54	46	39	28	37	28	55	37	45	37
2.	35	1	25	-13	48	21	55	20	58	36	49	34	52	29	47	26	34	16	57	38	39	29	49	20	56	38	48	35
3.	32	5	36	-13	50	18	55	23	61	32	49	25	52	33	56	29	44	16	63	39	44	29	55	17	57	26	52	30
4.	39	1	40	3	56	23	48	31	67	38	53	26	52	37	59	34	46	19	71	46	51	34	61	22	58	26	54	40
5.	45	13	43	0	57	24	59	30	71	39	59	28	64	41	60	31	56	23	68	45	52	39	61	22	58	28	62	32
6.	40	14	40	7	62	24	50	30	76	31	58	35	58	41	60	36	57	20	64	44	44	36	56	22	69	31	50	32
7.	42	35	43	18	60	28	53	33	72	34	51	35	53	41	59	44	54	24	59	46	47	36	44	33	62	40	49	40
8.	45	40	44	5	60	28	47	32	73	38	57	40	55	35	50	24	67	44	48	36	49	29	59	33	54	40		
9.	43	36	43	24	65	29	47	37	72	35	51	44	50	39	63	43	55	24	65	46	45	35	46	34	60	40	49	43
10.	46	40	39	16	63	30	60	30	74	39	57	36	51	38	58	45	56	30	70	46	52	39	60	27	60	41	58	38
11.	40	27	48	24	66	33	62	35	76	37	58	40	54	42	63	63	29	72	51	52	44	62	31	65	45	62	45	
12.	32	28	48	16	72	32	69	35	81	36	61	43	60	39	63	61	30	82	53	61	49	69	30	69	37	64	42	
13.	29	24	57	31	73	35	63	39	82	40	61	41	52	41	73	64	34	77	50	60	43	64	32	73	43	54	45	
14.	27	24	46	21	70	41	48	31	82	45	53	47	45	37	56	39	65	30	83	51	63	48	54	39	73	43	54	39
15.	29	21	31	-2	56	34	47	24	66	43	53	34	45	33	50	32	46	27	63	46	42	30	83	30	53	35	50	33
16.	30	26	35	13	52	24	52	32	60	32	53	34	47	31	55	29	47	24	63	40	48	34	55	19	60	33	53	35
17.	32	30	39	20	54	22	51	32	60	29	57	35	51	40	60	33	48	21	62	45	49	41	56	25	62	32	54	36
18.	30	23	38	29	58	25	47	37	64	29	56	43	50	45	56	33	52	25	63	43	45	39	49	30	62	34	48	44
19.	40	23	37	24	60	35	54	32	71	36	56	33	49	41	61	45	60	29	56	46	44	35	46	37	65	45	54	39
20.	30	27	37	24	63	33	50	30	71	45	56	41	48	42	60	38	56	23	58	44	46	34	60	28	63	43	50	41
21.	40	25	37	28	66	33	51	32	69	37	54	33	50	39	61	36	52	25	57	46	40	34	50	31	60	36	51	40
22.	37	30	40	25	70	36	50	37	75	36	54	42	55	47	55	40	63	28	58	45	45	36	53	33	62	37	47	42
23.	35	29	42	29	72	34	50	40	78	43	58	44	59	51	68	42	61	28	65	44	47	44	55	39	69	41	55	47
24.	40	45	43	35	70	36	49	46	81	42	61	51	55	47	66	47	61	31	64	46	47	44	49	43	67	45	56	51
25.	45	36	40	30	70	35	48	39	82	60	61	43	51	39	62	47	57	43	71	51	54	38	54	41	65	42	60	46
26.	44	39	47	27	68	33	50	28	79	48	61	40	50	38	64	41	64	36	70	48	53	39	61	28	67	40	57	41
27.	42	28	42	30	72	36	50	38	83	41	58	47	53	47	66	40	68	32	75	49	56	50	62	30	68	41	54	43
28.	50	25	45	35	74	38	55	43	83	42	61	50	52	49	62	42	74	34	73	50	57	45	64	42	62	43	55	61
29.																												
30.																												
31.																												
Means.	37.8	24.6	40.6	17.3	62.9	29.5	52.4	32.8	72.6	38.6	55.9	39.0	51.5	40.0	59.7	38.1	55.8	26.9	65.2	46.0	47.4	37.4	54.2	29.5	62.5	37.8	53.5	39.9

Date.	California.																													
	Redlands.		Sacramento.		San Diego.		San Francisco.		San Jose.		San Luis Obispo.		Santa Barbara.		Santa Rosa.		Siskion.		Stockton.		Summit.		Susanville.		Yosemite.					
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1.	51	39	48	30	54	43	49	40	50	35	51	38	55	42	52	32	29	9	48	37	26	14	41	11	40	24	42	11	40	
2.	54	35	48	35	56	37	50	41	51	35	53	34	65	31	56	25	32	6	48	38	20	2	24	8	47	11	5	50	18	
3.	60	27	47	34	59	39	52	38	57	25	62	27	60	32	55	24	40	4	50	38	26	10	21	21	5	46	5	50	18	
4.	65	30	52	34	62	42	56	40	58	23	62	29	63	33	58	23	47	7	54	30	20	23	21	23	21	5	46	5	50	18
5.	67	34	57	35	60	42	58	40	60	23	67	35	66	37	58	26	42	20	54	30	32	18	23	23	21	2	23	2	23	18
6.	66	34	53	36	60	41	52	41	57	30	59	34	59	38	56	36	40	30	53	32	36	20	30	30	30	0	50	10	50	36
7.	57	33	51	41	58	43	55	47	57	42	56	44	58	40	56	41	43	33	55	35	46	7	37	28	35	28	35	28	35	28
8.	68	35	50	40	61	41	54	45	60	36	64	45	59	41	56	34	42	31	51	37	38	18	32	32	32	6	49	29	48	28
9.	66	38	53	46	59	44	55	46	58	46	60	44	67	39	54	45	43	25	54	39	35	20	42	23	48	23	48	23	48	23
10.	73	37	58	38	64	42	62	46	55	36	57	40	64	39	56	27	32	23	55	38	46	18	31</							